SUBSIBY STEAL APPEARS DEAD

Democrats Seem to Have ATTEMPT TO END WAR Killed the Measure.

RIVER AND HARBOR BILL BEING PARED

Grab Too Flagrant Even for rection of peace in South Africa is President McKinley.

(Special to The Herald.) Washington, Feb. 9.-The national shipping subsidy bill is dead. All in-

Aldrich are not in an amiable frame of dia. mind over the existing situation. They will endeavor to force a vote on the bill before this congress dies by limitation, but the chances are against their success in this direction.

With Hanna's pet measure hung high in the air and the fact that congress will undoubtedly fail to enact certain laws which the president considers necessary, an extra session of congress early in the spring is foreshadowed.

River and Harbor Bill Pared. The committee on commerce in the The committee on commerce in the senate today had under discussion the seded by General Sir Evelyn Wood, rerivers and harbors bill which recently passed the house. It is reported knowledge that General Kitchener has, of late, been urging the dispatch of addeep into the appropriations authorized in the house bill and will make material reductions in the sums authorized ditional generals to assist him, as well as more troops to carry out his operations. General Wood, it is understood,

able.

In view of the fact that the senate committee is making this cut, it is probable that the president may approve the measure when it is submitted to him. It is said that the president has notified prominent members of both houses that he would veto this bill if the total appropriation in the measure as it passed the house of pared down about the committee of the committee is making this cut, it is probable that the president may approve the measure when it is submitted to him. It is said that the president has notified prominent members of both houses that he would veto this bill if the total appropriation in the measure as it passed the house of pared down about 1899, the chief command of the British forces would have been given to Geheral Wood had it not been for the fact that his deafness practically disqualified him for such an important position. The adjutant general is as deafnow as he was then."

Boers in Heart of Cape Colony.

Cradock, Cape Colony. bill if the total appropriation in the measure as it passed the house was not pared down about one-half.

It is believed tonight that the house will agree to the bill as amended by the senate.

Day's Proceedings in Senate.

Washington, Feb. 9.—During almost the entire session of today the senate had under consideration the naval appropriation bill. The bill was practically completed when it was laid aside for the day, all the committee amendments being adopted but as the aside for the day, all the committee amendments being adopted, but as the measure was about to be placed on its passage Mr. Butler precipitated a discussion of the armor plate question. In order to enable some others to speak upon the matter the bill was laid aside until Monday.

Tillman on Per __s.

The passage at the be inning of today's session of the senate of a bill granting a pension of \$50 a month to Stacy H. Cogswell, company F. Thirteenth Indiana volunteer infantry, induced Mr. Tillman (S. C.) to make some forceful comments upon the provider. some forceful comments upon the house in not 'aking action upon a bill providing a pension for a Mexican war veteran who had resided in South Carolina during the civil war, and naturally had been in sympathy with the confederacy. The bill had been passed by the senate, but the house invalid pension committee was alelaying final acsaid there was such sectional animos-ity in the house committee that the the bill for the benefit of this old Mexin veteran.
"Is the war over or is it not?" de-

manded Mr. Tillman, with vehemence. "Let us find out whether it is or not.
"I swear by the Almighty God I will not let another pension bill pass this

The resolution offered vesterday by Mr. Berry calling upon the president for information as to whether the American minister to China has joined ers in demanding the execution of Prince Tuan and other Chinese officials, was adopted without debate.

Naval Bill Taken Up.

At the conclusion of the routine business, the naval appropriation bill was taken up and discussion resumed of he amendment of the senate committee striking out the provision of the house which practically reduces the course of tudy at the naval academy from six The amendment was agreed to, 40 to

The agricultural appropriation bill was reported by Mr. Proctor. He gave notice that he would call it up for consideration next Tuesdar.

Amendments authorizing the presi-

boatswains, gunners or warrant machinists, not exceeding six in any one year, and to appoint to the naval academy not exceeding three of the acting cadets who served with credit during the Spanish war, were adopted; also president, and striking out the navy by authorizing the construction of two unsheathed sea-going battleships and two unsheathed armored eruisers, and inserting in lieu of it an extended

Armor Plate Discussed.

Mr. Butler then called attention to the paragraph in the bill appropriating \$4,000,000 to pay for armor plate already contracted for. If the bill bad provided the entire sum necessary to pay for armor contracted for it would carry for that purpose, he said, \$16.564,550. He leclared the senate was precluded from of the navy to pay for armor whatever the armor trust could hold him up for. Mr. Butler declared that by the present armor trust.

At the conclusion of Mr. Butler's speech the naval appropriation bill was Mr. Penrose then called up his resolutions relating to the death of Alfred C. Harner, late a representative in congress from Pennsylvania, and the sen-

The resolutions were passed, and the senate, at 6:05 o'clock, adjourned.

GEN. KITCHENER TO GO

Rumor Sir Evelyn Wood Will Be Sent to Africa,

HE WILL ACT AS A PEACE COM-MISSIONER.

New York, Feb. 9.-A dispatch to the World from London says: An important development in 'he di-

believed to be impending. General Sir Evelyn Wood, who brought about an arrangement with the Boers after Majuba, (the final battle of the Boer war of 1880-81, ending in British defeat), is going out in a spe-

shipping subsidy bill is dead. All indications now point to non-action on this measure at this session, owing to the opposition of the Democrats, aided by some Republicans.

Naturally Senators Hanna, Frye and Aldrich are not in an amiable frame of the commander-in-chief in Indications in the session of the Democrats, aided by some Republicans.

Naturally Senators Hanna, Frye and Aldrich are not in an amiable frame of the commander-in-chief in Indications now point to non-action on this measure at this session, owing to the capacity, probably as a commissioner, which will enable him to treat with the Boer generals.

His appointment will be a virtual superseding of Lord Kitchener, who, it is expected, will soon be relieved and become the commander-in-chief in Indications now point to non-action on this measure at this session, owing to the capacity, probably as a commissioner, which will enable him to treat with the Boer generals.

The scheme, which, it is believed in the best-informed circles is afoot for the ending of the war, undoubtedly is due to the influence of the king, who was actuated by the advices of the

Story is Denied. A dispatch to the Tribune from Lon-

"In the absence of anything like satisfactory intelligence from South Afri-ca as to the development of General Kitchener's plan of campaign, rumors at the service clubs are more plentiful than ever. The latest one, to the effect ceived great publicity yesterday afterin the house bill and will make material reductions in the sums authorized for the usual improvements. It is said that some appropriations were cut down to a fourth and the committee has not hesitated to attack some of the continuing contracts which were supposed to be inviolate.

The proceedings of the committee are secret and no details are obtainable.

The proceedings of the committee are secret and no details are obtainable.

Desedter Says Dewet Flogs. Herschel, Cape Colony, Feb. 8, (Friday).—A deserter from General Dewet's force avers that he treats his men cruelly and frequently sjamboks them. The deserter was arrested by the Boers after he had surrendered to the British and was given twenty-five lashes Many Boers are deserting. President Steyn and General Dewet personally shoulder rifles:

French Takes Emerlio.

Cape Town, Feb. 9.—General French has occupied Emerlio in the Transvaal. Six thousand Boers retired. The Boers

Gazette this afternoon prints an interesting story, which it believes to be absolutely correct, to the effect that J. Goschen from the office of first lord of the admiralty he sent a letter to the queen, saying in substance that he de-

sired to relinquish office, as he was weary of public life. replying, Queen Victoria thanked Mr. Goschen for his long and devoted services, closing with the words: "Your queen is weary too, and longing

Archbishop Makes Denial.

Marseille, Feb. 9.-Archbishop Favre, the head of the French missions in North China and the vicar apostolic of omorrow. In the course of an interview he declared today that the accu-sations brought by the family of Lu

Case Postponed. The case against James Gillen and

Lizzie Wilkins, the strangers who left a Rio Grande Western train at Murray on Friday to engage in a spree and fight, was postponed yesterday until Monday. The couple are charged with the offense of disturbing the peace and quiet of the smelte

WAS A PLAYMATE

OF QUEEN VICTORIA (San Francisco Bulletin.)

city was once a playmate of the now deceased queen of England.
"I am at least three years older than the lamented queen," said Judge Cook, "and since her death I have been recounting the little incidents of my earlier life when she and I were playmates together in the old comments." mates together in the old commons at Tunbridge Wells, in Kent and Sussex. We were of course, cared for by our respective servants, and were not respective servants, and were not chuminy in the sense in which the word is understood in this country; nevertheless we saw each other frequently and became quite well acquainted. At that time no one suspected that she would one day become the queen of England, there were so many before her. As a child she was community, giving her maids a great deal of anxiety and always cutting up childish tricks. But as she developed into womanhood and finally became queen the characteristics which made

crossing a field near Windsor the wife of a plain workingman met her and the two started up a conversation. 'Oh,' said the former, 'have you ever seen the queen? How I would like to kiss her hand! The young sovereign modestly confessed that she was the queen and extended her hand to

her the most beloved of sovereigns be-

queen, and extended her hand to the plain woman, who covered it with kisses and went her way. "There is a good story told of the present king when he was a lad of 10 years. His father brought him to the seaside on one occasion, and the little fellow scampered off one afternoon to play in the sand with another boy of bout the same age. But the little fel-ows did not take to each other, and quarrel was soon under way. The ather of the prince saw the trouble and quietly approached the boys, who by this time were warmed up and pum-meling each other in fine fashion. The ittle prince was getting the worst it and was finally vanquished right be-fore the eyes of his father. He was carried home on the latter's back and



ROOSEVELT IS BRAVE EAST HAS A BAD STORM IS DIPLOMAT A THIEF?

Fight Case.

London, Feb. 9.—The Westminster lister on the application for a permanent injunction against the proposed contest.

The attorneys, however, insisted on so much time for arguments that another day will be spent in hearing them and the case will not be finally submitted to Judge Hollister until Monday evening. It Judge Hollister until Monday evening. It is hardly possible that Judge Hollister will then be ready to render his decision on. Tuesday morning, and if he renders it on Wednesday or Thursday there will be very little time for the proposed appeal to the higher courts. Meantime, there are all sorts of rumors about other proceedings, including an action against Madden and Brady for perjury, and especially against the former. During the arguments this afternoon Judge Peck insisted that the proceedings should be in a criminal court, rather than in one of equity, and asked why Brady, Madden, Cook and others, who were in the court room, were not arrested if they were abetting a prizefight, and held the same as Jeffries and Ruhlin had been two weeks ago. Counsel for the injunction replied that such might be the case further on. At any rate, there is much talk about what may yet be done to prevent the fight. While the defense denies the jurisdiction of the court of equity to grant such an injunction as is asked for, they will proceed on appeals, and possibly otherwise in case the injunction is granted. It is reported that if the injunction is refused, the plaintiffs will stop their proceedings on account of the limitation of time, it is easy the matter to the governor. is hardly possible that Judge Hollister

Br: ly Gets Dramatic.

Br. ly Gets Dramatic.

William A. Brady made a dramatic as well as a strong witness today. He was not kept on the stand as iong as Madden yesterday, but he made much more of ar impression. Madden had testified that Jeffries and Ruhlin would spar with "love taps" for points. Erady said his man would hit as hard as he could to retain the championship and he had no doubt that Ruhlin would meet him equally vigorously. Brady said any other kind of a performance would be a fake and an imposition on the public. Brady, however, maintained, as did Madden, that there had been no prizefights since the days of Sullivan. Ex-Justice of the Peace Cook of this

there had been no prizefights since the days of Sullivan.

Brady testified to sitting beside Theodore Roosevelt at one of the contests in the Metropolitan theatre in New York. Brady testined to reserving a box for Roosevelt at another contest, but Roosevelt did not attend. Brady thought his failure to attend was because the New York papers had said so much about him having a box reserved.

Judge Harmon asked Brady if he thought a man who was not airaid of a lion was afraid of newspaper talk. Brady replied in the negative, and paid a high tribute to Roosevelt. Judge Holiister asked Brady if he thought Vice President Roosevelt was a coward. Atterneys for the defendants, in chorus, responded that the question was very much uncalled for.

Roosevelt Bravest Man on Earth

Roosevelt Bravest Man on Earth.

Judge Hollister then scored the atterneys for the defense and said that the question was asked because the court considered that a man who favors such contests and keeps away from them because of public sentiment is a coward. Brady replied that he considered Roosevelt the bravest man on earth. Brady proceeded to testify to the high standing of business men and others who were present on the occasion when he sat near Roosevelt and on the occasion on which he had reserved a box for him, and stated that he expected the same class of people here next Friday night. He testified to reserving a section of the hall for members of the board of trade of Chicago and to orders for tickets from prominent men all over the country.

The most prominent arrivals today were Tom Sharkey and Spider Kelley. Sharkey says he is here to challenge the winner immediately after the fight. He says he has a forfeit of \$2.500 posted with Als mith in New York to fight Jeffries. Should Ruhlin win, the check will go as a forfeit for a meeting with him. Sharkey says he expects Jeffries to win, but that Ruhlin will give him a hard fight. Sharkey says he has a promise from Jeffries to be the next man in the event that the champion wins.

To run the risk of losing his way while going down the channel.

At Sandy Hook the wind was blowing from the north and the snow was so thick it was impossible for the marine observer to make out the ship channel.

The Lucania is the only steamer that has ventured out from dock.

Shriners Not to Touch / lit Lake.

Grand Rapids, Mich., Feb. 9.—The Mystic Shriners who are to go from the north and the snow was so thick it was impossible for the marine observer to make out the ship channel.

The Lucania is the only steamer that has ventured out from dock.

Shriners Not to Touch / lit Lake.

Grand Rapids, Mich., Feb. 9.—The Mystic Shriners who are to go from this city to Honolulu under the leader-ship of Imperial Potentate Lou B. Winsor of Reed City, will leave here Feb. 25 in a special Roosevelt Bravest Man on Earth.

German Cruiser Leaves.

The resolutions were passed, and the senate, at 6:05 o'clock, adjourned.

Reports Judicial Pay Bill.

Washington, Feb. 9.—Senator Clark, from the committee on judiciary, today favorably reported the bill increasing the salaries of territorial officers of the territory of Hawaii.

And it was. This story is perfectly true, and was common talk at the time.

Our latter back and the was derman toruser leaves. New Orleans, Feb. 9.—The German cruiser Vineta, which had been lying in this part for two weeks, was given a royal send-off today on her departure for Vera Cruz. After spending some time in the West Indies, the cruiser will return home. Commander Waitheim before leaving expressed his projound gratification at the extremely courteous reception that had been tendered his officers, his crews and himself.

Brady So Testifies in Prize Chicago Suffers from a Severe Charges Made Against American

torm was increased to four early today. Victor Corona was found dead on He is supposed to have road. struck by a suburban train. Miss Ida McCune, an elderly woman, was found unconscious in a snow drift, and died

The deep, clinging snow interfered ng impossible for the horses to hau he heavy apparatus quickly through

On the South Side elevated railway a collision occurred on a curve at Sixty-third street which derailed two cars and caused a panic among the passengers, but no one was seriously injured. Trains on all roads centering in Cr ed heavy snow extending from Duluth down the Mississippi valley to St. Louis and eastward the storm was covering Ohio with snow. South of St. Louis it

In Chicago the new snow coming on op of the foot that fell last Sunday formed drifts in the suburbs that made The total fall of snow was the heaviest

OCEAN LINERS IMPEDED. Storm Keeps Cunarder From Leaving New York.

New York, Feb. 9.—The snowstorm which set in about 9 o'clock this morning is interfering with the movement of outgoing ocean steamers. The Cunard esteem. liner Lucania, which left her docks shortly before 10 o'clock, anchored off quarantine, the air being so thick with snow that Captain Dutton did not care to run the risk of losing his way while

Bad Form. "Listen!" he whispered.
Mariorie pressed his hand softly.
"Not now!" she said. "It is bad form
to listen while the plano is playing!" Food, Not Work.

(Pick-Me-Up.)
Farmer's Wife-Why don't you eat that piece of steak I sent out for you?
Tramp (indignantly)-I didn't ask for work, ma'am; I asked for something to eat.

Secretary Squires.

It was thought that arguments would be completed tonight before Judge Hollister on the application for a permanent seriously interrupting the suburban seriously interrupting seriously interrupting the suburban train service on all roads. So blinding was the fine snow, driven by the northeast wind, which at times reached a velocity of forty miles an hour, that many accidents resulted.

Andrew J. Switzer, a railway switchman, was instantly killed by a Grand Trunk engine. Switzer was facing the storm and did not hear the bell.

Alvin Carlson was also run down and badly mangled while inspecting air brakes on a Lake. Shore passenger train.

The death list resulting from the terminational government of Pekin, charging Bishop Favier, who is now in France, with looting their house of money and valuables to an aggregate of a million taels, (about \$700,000), on the day after the siege was raised.

The League of Civilian Looters, of all nationalities, has been disrupted by differences which have arisen over the difficulty. It is interesting to note that the vibration of the Hertzian waves are forced along a single path or wire. Professor Pupin pointed out this fact to his fellow scientists some two years ago, and explained then to some extent his method for overcoming whe difficulty. It is interesting to note that the vibration of the Hertzian waves are forced along a single path or wire. Professor Pupin pointed out this fact to his fellow scientists some two years ago, and explained then to some extent his method for overcoming whe difficulty. It is interesting to note that the vibration of the Hertzian waves are forced along a single path or wire. Professor Pupin pointed out this fact to his fellow scientists some two difficulty. It is interesting to note that the vibration of the Hertzian waves are forced along a single path or wire. Professor Pupin pointed out this fact to his fellow scientists some two years ago, and explained then to some extent his method for overcoming when the foreigness are substantiated.

murder, assault and robbery against the foreigners are substantiated, as there is much reason to believe will be the form of waves for his wireless there is much reason to believe will be the form of waves for his wireless that the vibration of the waves vary in length from a few inches to a few hundred feet. Marconi uses there is much reason to believe will be the form of waves for his wireless that the vibration of the charges waves vary in length from a few inches to a few hundred feet. Marconi uses

Christendom will have cause telegraph work. The ordinary telethe case, Christendom will have cause to blush for shame.

The family of Lu Sen state that the stolen property is now in the posses-sion of Herbert J. Squiers, first secretary of the American legation, and is

about to be shipped away. SURPRISED AT AMENT.

Christian Endeavor Chief Deprecates Extortion Charge. Boston, Feb. 9.-In an interview Rev.

Francis E. Clark, head of the Christian Endeavor movement, who saw the missionaries in China just before the Boxer ago were from fifteen minutes to two uprising, and who was personally acquainted with Dr. W. S. Ament, Rev. E. G. Tewsbery and other missionaries who have been accused of looting and extorting money from the Chinese vil-lages, expressed himself very strongly upon the subject. He said it was uttereye change his character and take his place among the thieves and swindlers, as some reports from China seem to im-

> Dr. Ament was Dr. Clark's interpreter at many Christian Endeavor meetings in Pekin and Tien Tsin. Dr. Clark saw him to call upon prominent Chinese officials. He found him honored and es-teemed by every one. The Chinese Christians respected and loved him and ven the official class held him in high

sand times as much

tervals in his telephone circuit. In one

each had the same amount of self in

re its rectilinear wave length was re-

thousandth part of its original length. Thus very simply, it would seem Pro-fessor Pupin found a way of creating

short waves, and having found them, of making swift and accurate electric communication possible over much greater distances than before. One of the great obstacles to ocean telephony was then removed. It remained to arrange the colls along his wire and

to arrange the colls along his wire or eable in such a manner that the right

effects would be produced, by so adjusting each coil that the energy sent through the circuit would be conserved.

duction to less than one two-hundre

To Cure the Grip in Two Days. Laxative Bromo-Quinine removes the

Orthodoxy in Kansas. (New York Sun.)
The liquor men are orthodox
In Kansas; They are brought to it by blows and knocks In Kansas:

In every class and station
They believe beyond negation
In the doctrine of Dam-Nation,
And they're praying for salvation
Out in Kansas. Life Lines, by R. W. St. Hill.

(New York Herald.)
We get very tired of enjoying our rights; it's other people's rights we'd most like to enjoy.
A woman always feels safe when she thinks she can trust a man, but she'd be a whole heap safer it she could always trust herself.
Success would be trust as the could always trust herself. Success would be very sweet if it ever stayed long enough for us to learn the stayed long enough for us to learn the taste.

Many people try to get what they think they want; these are the knaves. The rest try to think they want what they get, and these are the fools.

The cheapest way to learn fortitude is to watch others suffer; their heart tears harden our cheeks.

If ignorance really is bliss, it's a wonder more of us don't die of sheer happiness.

Punished. "What are you reading, Dorie?"
"Papa's poems."
"Been naughty?"

Usually Tells You About It. (Chicago News.)
A woman who suffers untold agony is an exception to the rule.

Lament of Cardinal Wolsey Lippman.

OOD-BYE! a long good-bye to all my greatness! This is the state of man: today he puts forth His drag and makes it work; tomorrow chuckles And tells the gaping public how he did it; And when he thinks, good easy man, full surely He is the entire push, the only It, Kerbiff! he gets it in the neck, and then He falls, as I do. Serene, I ventured Like little wanton boys to toot my trumpet These many ev'nings in hotel rotundas, To pipe my game and wear a chesty front. I was all swollen up. And then came Tom, Punctured my pride and let the hot air out, And lo! the pavement rose and swatted me. I feel my neck now stepped on. Oh, how wretched Is he that hangs upon a solon's coat-tails. There is betwixt that job we do aspire to, That breaking of a senator to harness, That handling of the ribbons, and our ruin More slips and fall-downs than are to be found In twenty miles of fresh banana peels; And when he falls-Great Ceaser, how it jars him! O'Meara, Billy! Fling away ambition! It isn't what they crack it up to be. Play not the rooster on the barnyard fence; Crow not, but with bowed head seek out fat worms And swallow them in silence. Then if thou fallest, Thou fallest with a full, contented stomach. Had I but held my tongue with half the zeal Theld my job of manager, I wouldn't

Hello! Is This Europe?

+++++++++++++++++++++++++++++

In a Few Years We Shall Telephone Under the Oceans and Across the World By Prof. Pupin's New Method.

Professor Michael Idvorsky Pupin of Columbia University has recently invented an apparatus by which he has demonstrated the possibility of telephoning across the ocean and substitution of the phoning across the ocean and substitution of the professor Pupin's present laboratory apparatus, 250 miles of wire are supplied with 250 "choking coils," one coil being tuting telegraphy at the rate of 1,000 words a minute for the present system of fifteen to twenty words a minute used in cabling across the Atlantic. His invention is not so revolutionary in its character as was the first use of the telephone or even as is the introduction of wireless telegraphy, but it is important enough to warrant general attentant enough to be actually distributing capacity, self-induction, and resistance. dollars and a large annuity to the inventor. It is not often that a college professor is paid \$100,000 a year for his labor: Professor Pupin is an exception to the general rule. It has taken him about five years to work out the present principle. The scentific possibilities have been proved; the commercial

Be weltering in the soup.

Pupin's laboratory presents a curlous looking apparatus. Over on each of five tables stands a box about two feet five tables stands a box about two feet square in which is contained fifty miles of wire, representing, if you will, fifty miles of ocean cable. From each box project connections for 200 wires and these wires are attached to fifty coils, each coil being supplied with four terminals. The coils themselves look like small earthen jars open at both ends; in reality they are merely made side now remains to be taken up and applied to general use.

It was in 1895 that Professor Pupin began his series of experiments now first made known in their successful result to the public. Doubtless many ends; in reality they are merely made up each of two coils of wire of dif-ferent size carefully insulated from each SPAR WITH LOVE TAPS

FOUR PERSONS KILLED

LOOTERS FALL OUT

ACCORDING TO MADDEN'S VERSION OF COMING CONTEST.

STEAMERS ARE UNABLE TO
Cincinnati, Feb. 9.—The situation is more complicated than ever tonight regarding the contests here next Friday night before purish to between Martin and Childs and Jeffres and Ruhlin.

Cincinnati, Feb. 9.—The situation is more complicated than ever tonight regarding the contests here next Friday night before purish between Martin and Childs and Jeffres and Ruhlin.

Chicago, Feb. 9.—Seven inches of snow fell in Chicago during the storm which started yesterday afternoon and Jeffres and Ruhlin.

The family of Lu Sen, minister of foreign affairs, who was executed by the empress dowager because he would not sanction the anti-foreign movement, be another the problems of resistance in whree used for long distance transmission, but mere the problems of very long elected on ordinary induction coil. Doubtless many other scientists had pondered over the problems of resistance in whree used for long distance transmission, but no one saw away of overcoming the difficulties. With the systems now in use only very long electer works of miles long and the main difficulty in finding a way of studying their effects legist. There were, previous to the work of Professor Pupin, no laboratory experiments possible which to prove any mathematical theories regarding them. Indeed, it was not until Heinrich Hertz produced electric waves short of the second property placed along the line of dominance of the problems of the study of electric waves are not only very long elected to an ordinary induction coil. Dublies many other scientists had pondered over the problems of versitations of resistance in write used for long distance transmission, but no one saw away of overcoming the difficulties. With the systems now in use of the problems of situations of the main difficulty in finding a way of studying their effects recently in the problems of t

induction, and resistance.
In its outward appearance, Professor

Professor Pupin has arranged, he has found that one coil every mile will bring cables this proportion may not hold good, but Professor Pupin does not an-ticipate any difficulty in adjusting his method to the required conditions. Of course, the use of the apparatus will entail a new system of construction in at certain intervals along the line of communication. For this reason, a revolution in the present system of cabling cannot take place at once. A new cable must be laid, a Pupin cable it may be called, which will differ from the ordinary cable by having perhaps thousands of these little induction coils phone or telegraph wave, on the other hand, as has been noted, is hundreds attached to it. With his 250 miles of of miles in length and is produced by vibrations of only a few hundred or few thousand per second. Now the chief telephone or telegraph circuit (it can be used for either purpose), Professor thousand per second. Now the chief drawback to long distance telephony has been the blurring of the vibrations Pupin has demonstrated to the satisfaction of experts that his system is entirely practicable. The American Telephone & Telegraph company has which act on the telephone receiver, caused by the action of these long waves. In telegraphy the main diffi-culty seems to have been the loss of sufficient faith in the invention to make a purchase of it for half a million dollars and to guarantee to the inventor an annuity of \$7,500. It is their purenergy along the line, together with the great resistance of a long line. pose to install the system on land wires about to overcome by an apparatus which would produce short waves and Atlantic cable after the Pupin pattern. These difficulties Professor Pupin set reduce the evil effects of resistance.

How was he to produce shorter
waves? He brought to bear first the
light of other science on the problem,
and taking the action of a wave of light Up to the present time the longest disanticipates no difficulty in telephoning several thousand miles. Already experiments have been made looking to in passing through different mediums thus producing various wave lengths, he applied the principle to electric waves. For example, the wave length of sodium light is shorter in glass than in vacuum—light travels slower in glass. ward the application of telegraphy at the rate of 1,000 words a minute with the new rapid telegraph instrument at tached to this apparatus and there seems to be no reason why success should not follow. Indeed, Professor Pupin says that the experiments have already shown that rapid telegraphy than in vacuum, and if one could in-crease the index of refraction of glass to anything he wished, he could de-crease the wave length in that glass to in connection with this system is an

assured fact. anything he wished. As the medium grows denser the energy it stores up inassured fact.

At any rate, the present tedious method of cabling will be superseded by at least the speed and method of ordinary land telegraphy. With Proreases. As Professor Pupin argued, if substance which stores up a thouvacuum be placed in the path of the ray of light the waves will be one-thoufessor Pupin's apparatus a much larger proportion of the energy imparted to the transmitting end of the cable will be received at the other terminal and sandth part as long in that substance as in the vacuum.

Now apply the principle to electric waves. Professor Pupin found the necthe reflecting mirror and sine wave method will be unnecessary. Messages may be sent and received through a trans-Atlantic cable as readily as a message can now be sent from Nev York to Philadelphia. More than that, essary medium in a certain "choking coil" of wire which he inserted at inof his earlier experiments, he connected in a single circuit fourteen coils of wire, each of which was capable of storing ocean telephony is possible. We may talk with friends on the continent as readily as we now talk over a distance of a few miles. The present improvement is of more far reaching importance in that the easier means of communication will bring about cheaper rates for ocean and land messages. In up the same amount of energy as ten miles of telephone wires, that is to say, duction, resistance and capacity as ten miles of telephone wire. The coils were placed three inches apart, making a total length of three and a half feet. deed the imagination may carry one fair in the attempt to limit the possibilities He had, then, the equivalent of 140 miles of telephone wire. A wave 140 miles long would develop its whole wave length, taking a spiral course now. In the fourteen collection was a spiral course of the latter than the latter than the spiral course of the latter than the of such a simple apparatus as this invention proves to be. And yet, as has been pointed out, Professor Pupin has not so much revolutionized present sysnow, in the fourteen colls, but as it had gone over only three and a half so much revolutionized present sys-tems as he has improved upon them. Several months ago Professor Pupin was approached by one of the telephone companies who wanted to secure the feet its rectilinear velocity and there-

benefit of his patent, but they unwilling to pay the very modest sum which the inventor was then willing to take. Since that time they have had occasion to regret their action in the matter, as the present arrangement for the use of the invention gives to Pro fessor Pupin a very much larger return than he had formerly asked. The inventor is still working on his apparatus working capacity will be secured. Pro-fessor Pupin is very modest about his success and dislikes the notoriety which it has brought upon him,

The Result of Thinking.

It is in the adjustment of the colls that the virtue of the invention consists, and the explanation is too technical for general comprehension. It is sufficient for the laymen to know that these Pupin coils overcome the evil effects of electric resistance and make possible another great step in practical progress.

(Fun.)

"I suppose you never thought about marrying when you were a young man, uncle?"

"Indeed, I did. That's why I'm a back."